

NIDDS*

Non Intrusive Deposit Detection System



FEATURES

- Non-Intrusive Sensor**
- Detection of deposit build-up**
- Application to Wax, Asphalten an Scales deposits**
- Control of deposit removal**
- Quantification of deposit thickness**
- Installation on risers and pipelines (from 4" to 16 ")**

The first non-intrusive sensor for inside pipeline deposit detection & quantification on riser and pipelines in deep water applications

*** NIDDS principle is patented**

Non Invasive Deposit Detection System

GENERAL

The **NIDDS** is designed to measure internal deposit which builds up in pipelines and risers in order to help operators to optimize pigging operation schedules and chemicals inhibitors injection as well.

The system consists in a clamp which is adapted to the pipeline, and designed to be thermally transparent. This clamp supports a couple of heaters and temperature sensors, the number of which depending on pipeline diameter.

The **NIDDS** was developed by **CYBERNETIX** in co-operation with **IFP** and **TOTAL**.

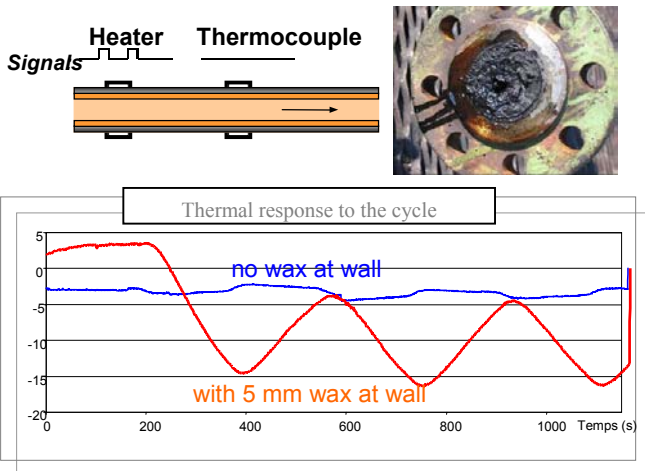
SENSOR SYSTEM

The NIDDS are installed on the **outer wall** of the pipeline and are linked to an acquisition system.

The detection is based on a simple thermal principle: A defined quantity of heat is injected for a short given time, using a heat source, while a sensor records the thermal responses.

The measurement data acquired by a NIDDS are processed in **real time** by a computerized method to **quantify and estimate the deposit thicknesses**.

The method is derived from the modelling of heat transfers in the pipeline wall and fluid, in various conditions.



INSTALLATION

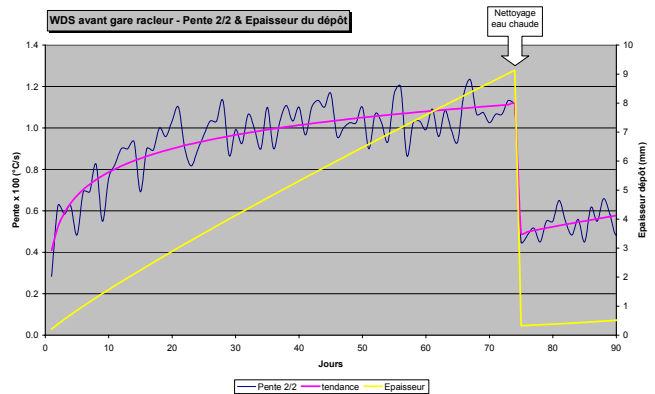
The **NIDDS** is installed within the thermal insulation foam.

The Data Acquisition and Recording System which is fixed near the **NIDDS** transmits the data either by umbilical or acoustic modem to the surface unit.



REFERENCES

- The **NIDDS** was successfully tested early 2005 for 100 days on an onshore production line operated by GEOPETROL, located South-West France.
- Deployment of the deposit detector and associated technologies is now awaiting the first Track Record results, in particular in offshore condition.



Cybernetix Oil&Gas Division - Technopôle de Château-Gombert - BP 94 - 13382 MARSEILLE Cedex 13 - FRANCE

Phone: 33 (0)4 91 21 77 00 - Fax: 33 (0)4 91 21 77 01

E-Mail: offshore@cybernetix.fr - Internet: www.cybernetix.fr